

AN ULTRASONIC TRANSDUCER ASSEMBLY FOR MONITORING A FLUID FLOWING THROUGH A DUCT

Abstract

An ultrasonic transducer assembly for helping monitor a fluid flowing through a duct is disclosed herein. The assembly includes: (1) a piezoelectric transducer element having a first contact surface electroplated with a first metallic film layer and an opposite second contact surface electroplated with a second metallic film layer; (2) a housing, configured on and at least partially conterminous with the outer surface of the duct, having a chamber in which the piezoelectric transducer element is situated and thereby substantially enclosed; and (3) means for conducting electrical signals between the electroplated first contact surface of the piezoelectric transducer element and the outside of the housing. In the assembly, the electroplated second contact surface of the piezoelectric transducer element is solder-mounted within the housing such that the piezoelectric transducer element is thereby coupled to the outer surface of the duct in a substantially conterminous fashion.